# Chesdin Reservoir
# Fisheries Management Report
# 2004

This jewel of a reservoir, located within ten minutes of Colonial Heights and Petersburg, and only thirty minutes from the heart of Richmond, is a 3100-acre reservoir that provides a multitude of recreational choices for the citizens of central Virginia. Impounded in 1962 as a water supply for the Tri-Cities area, this reservoir provides some of the best freshwater recreation and sport fishing in Virginia. The reservoir abounds in largemouth bass, crappie and a full variety of panfish, as well as channel catfish, walleye, and striped bass. The two marinas and the public boat ramp on the Dinwiddie side of the reservoir and the marina on the Chesterfield County side provide easy access to this recreational hotspot. Chesdin Reservoir is essentially open year round, 24 hours a day.

In May of 2003 the reservoir was sampled by boat electrofishing. In the lower reservoir, in the vicinity of the public boat landing, all fish species were collected for over one hour of electrofishing. One day later, another hour of electrofishing was conducted in the middle of the reservoir, in Whipponock Cove and surrounding main stem of the reservoir. This second sampling collected only largemouth bass. Gill net sampling was conducted in October, November and December for striped bass, catfish, and walleye.

The number of largemouth bass collected in 2003 dropped considerably from the record highs of 1999. This was a surprise but appears to reflect a decreasing trend statewide. In a little over two hours 137 bass were collected. There were 74 bass of at least 15-inches in length and 13 over 19-inches, a 30 and 20 per cent reduction respectively from 1999's record highs. Although not matching the 1999 collection rates and falling short of all collections post 1996, this was still a good collection for largemouth bass. The largemouth bass population remains in good shape but the reduction in numbers will be further evaluated in context with the apparent reductions statewide.

While the largemouth catch and sizes remained good, the bluegill population continued to be poor, matching some of the lowest catch rates in the last decade. No fish collected were over six and a half inches in total length and the majority of bluegill were much smaller. This did not come as a surprise because the bluegill in Chesdin Reservoir have historically been below statewide averages. This may be due to the population of gizzard shad in the reservoir, a forage species that is known to adversely impact panfish populations.

In August of 2003, gizzard shad were collected by electrofishing at sunset in the lower section of the reservoir. Shad were collected at a rate of 667 per hour, which compares favorably with other Virginia lakes. However, most were small juvenile and young of the year fish and it is felt that this collection did not reflect the gizzard shad population in the reservoir. Sampling times and methods will be changed in the future to more accurately determine the shad forage population and better enable managers to make comparisons with other reservoirs throughout Virginia.

Gill netting for walleye and striped bass was nonproductive. Four 200' gill nets were set for two nights each month (24 net nights total) in the lower 1/3 of the reservoir. To say the catch rates were poor would be an understatement. Weather may have played a role in the lack of success because water temperatures in October and November were in the 60's, and December was just the opposite. Cold water conditions may have caused fish to drop into deep water, thus

avoiding the nets. Over the three months a total of only three striped bass were collected, but the largest was over 36-inches in length and weighed 18 ¼ pounds – quite a catch. In Chesdin Reservoir, striped bass appear to be reaching maximum weight limits in the low 20's. Larger fish are seldom reported.

Gill netting also attempted to collect and determine the extent of the walleye population. Perhaps due to the weather, but most likely due to a very low population, the walleye catch rate was almost non-existent. Only five walleye were collected in the 24 net nights, the lowest catch since walleye stocking began. The largest was just shy of eight pounds. The walleye population began a precipitous decline in the mid 1990's when this specie began to be stocked every other year in an effort to determine the presence of natural reproduction in the reservoir. At that time the population basically fell to one-half its normal numbers. Then, for two years, no walleye were stocked, further harming the population. For the last three years (2001 - 2003), walleye have again been stocked annually and the population, although still in poor shape, appears to be re-establishing itself.

One success of the gill netting was the good catch of channel catfish. A total of thirty-four were collected, the largest at 24 inches. Most were caught in October but the largest fish were collected in November.

Fishery managers will continue to place special emphasis in the future on determining forage populations in the reservoir, basically determining the size of the gizzard shad population and how that population changes, if any, over time. Also, changes to the largemouth bass and panfish populations will be closely monitored as the shoreline structure in the reservoir changes as housing and other development occurs on the lakeshore.

The future outlook for Chesdin Reservoir as an excellent angling resource for largemouth bass looks very good. Fisheries biologists will continue to monitor the largemouth, panfish, and forage fish populations by boat electrofishing in 2007 as well as continue to monitor the striped bass, walleye, catfish and gizzard shad populations by gill netting in the fall as Department guidelines dictate.

A creel survey was conducted in 2003 (see separate report) and the results were compared to past surveys. Creel surveys provide information on angling success rates, harvest, fishing pressure, and related socio-economic data that is invaluable for successfully managing this reservoir's fisheries.

Creel data from tournaments can also provide invaluable information about largemouth populations. Many anglers have expressed the opinion that there are fewer trophy size bass in the reservoir and, consequently, attempts were made to collect information from bass clubs that conducted tournaments on the reservoir. However, no information was provided. That information will have to be collected in the future by department personnel at specific tournaments.

As an aid to anglers, attempts will again be made to place marked fish attractors around the reservoir as well as to refurbish the attractor at the fishing pier at the public boat landing. This will be a cooperative effort with the Appomattox Water Authority (owner and manager of the reservoir) and with private individuals and fishing clubs. Marked attractors will provide a service to anglers and help further utilize the excellent fisheries resource at the reservoir.

District: 9 Lake: Chesdin Reservoir Year: 2003

HISTORICAL ELECTROFISHING POPULATION STATISTICS

**(Numbers in parenthesis are statewide 50th percentiles)**

| | | | CPUE | | | Population Indices | | |
|---|---|---|---|---|---|---|---|---|
| | **Year** | **Effort (hours)** | **Stock (106)** | **Quality (32)** | **Preferred (0)** | **PSD (30)** | **RSD-P (0)** | **RSD-M (0)** |
| **Bluegill** | **2003** | 1.1 | 150 | 21 | 0 | 14 | 0 | 0 |
| | **1999** | 1.0 | 144 | 14 | 1 | 10 | 1 | 0 |
| | **1996** | 0.3 | 307 | 28 | 0 | 9 | 0 | 0 |
| | **1992** | 0.7 | 287 | 24 | 0 | 8 | 0 | 0 |
| | **1987** | 0.3 | 294 | 45 | NA | 13 | 0 | 0 |
| | **NA** | | | | | | | |
| **Largemouth Bass** | **Year** | **Effort (hours)** | **Stock (49)** | **Quality (17)** | **Preferred (7)** | **PSD (41)** | **RSD-P (14)** | **RSD-M (1)** |
| | **2003** | 2.1 | 57 | 47 | 35 | 83 | 61 | 7 |
| | **1999** | 1.0 | 110 | 101 | 53 | 92 | 48 | 7 |
| | **1996** | 0.7 | 132 | 79 | 25 | 60 | 37 | 2 |
| | **1992** | 1.0 | 84 | 42 | 18 | 49 | 21 | 4 |
| | **1987** | 0.8 | 13 | 12 | NA | 48 | 5 | 0 |
| | **1986** | 2.8 | 7 | 8 | NA | 55 | 19 | 0 |

**District: 9** **Lake: Chesdin** **Year: 2003**

**Length-Frequency Data for Bluegill and Largemouth Bass**

| | BLG | LMB | | BLG | LMB |
|---|---|---|---|---|---|
| **Length** | **Number** | **Number** | **Length** | **Number** | **Number** |
| 8 | 25 | 1 | 36 | | 5 |
| 9 | 37 | 1 | 37 | | 2 |
| 10 | 17 | 4 | 38 | | 3 |
| 11 | 29 | 1 | 39 | | 5 |
| 12 | 9 | 1 | 40 | | 7 |
| 13 | 18 | | 41 | | 6 |
| 14 | 10 | 1 | 42 | | 10 |
| 15 | 12 | 1 | 43 | | 5 |
| 16 | 10 | | 44 | | 10 |
| 17 | 1 | | 45 | | 4 |
| 18 | | 2 | 46 | | 8 |
| 19 | | 4 | 47 | | 3 |
| 20 | | 1 | 48 | | 4 |

| | | | | | |
|---|---|---|---|---|---|
| 21 | | 4 | 49 | | |
| 22 | | 1 | 50 | | 1 |
| 23 | | 2 | 51 | | 3 |
| 24 | | 3 | 52 | | 2 |
| 25 | | 1 | 53 | | 1 |
| 26 | | 1 | 54 | | |
| 27 | | 4 | 55 | | 1 |
| 28 | | 3 | 56 | | |
| 29 | | 1 | 57 | | 1 |
| 30 | | 1 | 58 | | |
| 31 | | 1 | 59 | | |
| 32 | | 2 | 60 | | |
| 33 | | 7 | 61 | | |
| 34 | | 4 | 62 | | |
| 35 | | 4 | 63+ | | |
| | | | **Total #:** | **168** | **137** |

**District: 9 Lake: Chesdin - 2003**

**CPUE Data for Largemouth Bass & Bluegill**

| | Indice | Effort/ hour | Sample Size | #/hour |
|---|---|---|---|---|
| Bluegill | Stock | 1.12 | 168 | 150 |
| | Quality | 1.12 | 23 | 21 |
| | Preferred | 1.12 | 0 | 0 |
| | Memorable | 1.12 | 0 | 0 |
| | Trophy | 1.12 | 0 | 0 |
| Largemouth Bass | Stock | 2.14 | 121 | 57 |
| | Quality | 2.14 | 100 | 47 |
| | Preferred | 2.14 | 74 | 35 |
| | Memorable | 2.14 | 8 | 4 |
| | Trophy | 2.14 | 0 | 0 |
| | | | | |

**Population Indice for Bluegill & Largemouth Bass**

| | Indice | Sample Size | Value |
|---|---|---|---|
| Blue | PSD | 168 | 14 |

| | | | |
|---|---|---|---|
| | RSD-P | 0 | 0 |
| | RSD-M | 0 | 0 |
| | RSD-T | 0 | 0 |
| Largemouth Bass | PSD | 121 | 83 |
| | RSD-P | 74 | 61 |
| | RSD-M | 8 | 7 |
| | RDS-T | 0 | 0 |

**District: 9** **Lake: Chesdin - 2003**

**Wr Values Data: Bluegill**

| | Range | Sample Size | Value |
|---|---|---|---|
| Bluegill | 0-7 (cm) | 0 | 0 |
| | 8-14 (cm) | 29 | 90 |
| | ≥ 15 (cm) | 11 | 85 |

**Age and Growth Data: Largemouth Bass & Bluegill**

**Mean Growth from Otoliths**

| | Age | I | II | III | IV | V | VI | VII |
|---|---|---|---|---|---|---|---|---|
| Largemouth Bass | Sample Size (N) | 3 | 9 | 9 | 7 | 9 | 7 | 3 |
| | Mean Total Length (mm) | 134 | 212 | 277 | 345 | 393 | 411 | 423 |
| Bluegill | Sample Size (N) | -- | 3 | 15 | 13 | 6 | 3 | -- |
| | Length (mm) | -- | 100 | 121 | 133 | 160 | 163 | -- |

## KEY FINDINGS

- Sampling collected 168 bluegill and 137 bass
- Bluegill ranged from 3 to 6-inches with a good range in sizes, and catch rate (CPUE) for stock sized bluegill was 150 (well above the statewide 50 percentile), the PSD of 14 and RSD-P of 0 were below and met (respectively) statewide averages

- Bass ranged from 4 to 23-inches with most size classes well represented, catch rate (CPUE) of 57 for stock sized largemouth basically met statewide averages and rate for larger fish exceeded average
- Bass PSD of 83, RSD-P of 61, RSD-M of 7 exceeded statewide averages
- Reservoir is perfect habitat for largemouth bass
- Department personnel will resample in 2007

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